

REMARKS

Claims 1-21 stand rejected. The drawings were objected to under 37 CFR 1.83(a). The Examiner rejected claims 1 and 4 under 35 USC 102(b) as being anticipated by DeRoo, Sr. (US 5,809,858). Claims 2 and 3 were rejected under 35 USC 103(a) as being unpatentable over DeRoo, Sr. in view of Deshet (US 4,856,399). Claim 5 was rejected under 35 USC 103(a) as being unpatentable over DeRoo, Sr. in view of Fetouh (US 4,569,109). Claims 6-8 were rejected under 35 USC 103(a) as being unpatentable over DeRoo in view of Duecker (US 5,927,582). Claims 9,12,14,15, and 20 were rejected over DeRoo in view of Duecker. Claims 10 and 11 are rejected under 35 USC 103(a) as being unpatentable over DeRoo in view of Duecker in further view of Deshet. Claim 13 was rejected under 35 USC 103(a) as being unpatentable over DeRoo in view of Duecker in further view of Fetouh.

Drawings objected to under 37 CFR 1.83(a)

The drawings were objected to under 37 CFR 1.83(a). The office action states that claims 5 and 13 claim a block shaped splitting element that is not reflected in the drawings and requests that the feature be shown or cancelled from the claims.

The Applicant respectfully traverses this objection. The Applicant calls the Examiner's attention to page 8, lines 14-22 of the specification as originally filed. The applicant discloses "splitting elements 36, 52, 56" that can be either simple ledges 36, 54 or supporting blocks 52. This, in conjunction with Figure 6 adequately supports the limitation of a block shaped splitting element in the drawings. The splitting elements 52 are clearly illustrated as block shaped. The Applicant, therefore, respectfully requests the objection be placed in obedience.

CLAIMS 1-4 rejected under 35 USC 102(b)

The Examiner rejected claims 1 and 4 under 35 USC 102(b) as being anticipated by DeRoo, Sr. (US 5,809,858). The office action states that DeRoo teaches using a splitting elements, a torque inducing element, loading the work piece onto the splitting element and breaking the work piece, and that the torque inducing element is capable of

forcing a multiple board array without loading electrical components, and that the splitting element is a wedge.

The Applicant respectfully traverses this rejection on several grounds. First off, the Applicant respectfully reasserts that the DeRoo patent is non-analogous art and therefore is not proper prior art. It is clearly not in the field of endeavor of electronic circuit production as is the present invention nor is it reasonably pertinent to the problem at hand. The DeRoo reference teaches a machine for "cutting and scoring paper, plastic, leather, cloth, metal, and other like materials" (see abstract). The DeRoo reference does not teach in the area of splitting/breaking circuit boards as claimed by the present invention. The DeRoo reference is a material scoring/cutting reference and not a finesse breaking apparatus as claimed by the present invention. The DeRoo reference does not teach edge loading the circuit board such that the splitting element breaks it along a pre-scored plane as claimed by the present invention. Rather DeRoo reference is a device for processing raw-materials and is not applicable to splitting apart individual circuit boards from a multiple board array. The simple two sided large surface presses 11,10 of the DeRoo reference would result in damage to the underside (or topside) of a preassembled circuit board placed within it. The DeRoo reference teaches the processing of materials that are not sensitive to surface loading as are the boards processed by the claimed apparatus. The Applicant, therefore, asserts that the DeRoo reference is non-analogous and should not be used against the present invention.

Furthermore, the DeRoo reference does not teach all the limitations of the present invention contained in claims 1 and 2. The DeRoo reference does not teach the processing of a multiple board array with pre-scored planes and a plurality of electrical components. The DeRoo reference does not teach positioning the splitting element along a pre-scored plane. The DeRoo reference does not teach edge loading the board (the DeRoo reference surface loads the material using cutting plate 11). And most significantly, the DeRoo reference does not teach edge loading to force the board into the splitting element to "break the multiple board array along the pre-scored plane" and the torque inducing element "without loading the plurality of electrical components" (claim 1). DeRoo fails to teach these limitations and therefore this rejection is improper. The Applicant, therefore, respectfully requests reconsideration.

Claims 2 and 3 rejected under 35 USC 103(a)

Claims 2 and 3 were rejected under 35 USC 103(a) as being unpatentable over DeRoo, Sr. in view of Deshet (US 4,856,399). The Office Action asserts that DeRoo teaches the limitations with the exception of the stabilizing elements, that Deshet teaches such a stabilizing element, and that it would have been obvious to combine.

The Applicant respectfully traverses the Examiner's rejections. The Applicant incorporates the above objections to the DeRoo reference and additionally asserts that the Deshet reference is also non-analogous. The Applicant notes that Deshet is also an apparatus for stamping thin sheet blank material (see col 1, 5-9). This reference as well does not teach the structure necessary to process multiple board arrays having installed electronic components as claimed by the present invention. The Deshet reference utilizes a blank holder 3 not, as asserted, a stabilizing element as claimed by the present invention. the stabilizing element of the present invention "reduces board flex" while the Deshet blank holder 3 pins down the blank for stamping. A multiple circuit board with electronic components placed into Deshet (or DeRoo for that matter) would result in a plurality of destroyed electronic components. Neither reference edge loads to avoid loading the electronic components, neither reference aligns a splitting element along a pre-scored plane, and neither reference induces torque without loading the electrical components. Therefore neither the DeRoo nor the Deshet references either alone or in combination with the present invention teach the limitations of the present invention and the rejection should be removed.

Claim 5 was rejected under 35 USC 103(a)

Claim 5 was rejected under 35 USC 103(a) as being unpatentable over DeRoo, Sr. in view of Fetouh (US 4,569,109). The Applicant traverses this rejection and incorporates by reference the objections to the DeRoo reference discussed above. The Applicant additionally traverse the Fetouh reference as non-analogous. The Applicant would like to briefly state his position regarding a number of the references cited. Although the Applicant asserts that the cited references do not teach every limitation of the present invention, the Applicant also asserts they are non-analogous. The Applicant

notes that while the functions of some of the references may appear to be similar, it is comparable to looking to a sledge hammer to kill a flea on a china dish. Would the flea be dead in the end, probably. But would one seriously look to such a teaching when looking to solve the problem at hand... no. The stamping of metal blanks, the cutting of metal sheets, the use of large flat pressing panels, the tearing of cardboard, and the splitting of glass would all place the assembled circuit boards in a position similar to the aforementioned china dish. The limitations of the present claims, therefore, must be considered in total in regards to the art to which they are directed. The Applicant submits that neither the DeRoo nor the Fetouh reference, either alone or in combination, teach all the limitations of the present invention.

Claims 6-8 rejected under 35 USC 103(a)

Claims 6-8 were rejected under 35 USC 103(a) as being unpatentable over DeRoo in view of Duecker (US 5,927,582). The Office action asserts that DeRoo teaches the limitations of the present invention with the exception of a transport element with a plurality of wheels and the torque element being a pneumatic lever. The Office action asserts that Duecker teaches these limitations and that it would have been obvious to combine these references to arrive at the present invention.

The Applicant traverses these rejections and reasserts the objections to the DeRoo reference. In addition the Applicant reasserts the objections to the Duecker reference as asserted throughout prosecution as non-analogous art. The Applicant again notes that Duecker teaches clamping and ripping apart cardboard, not stabilizing and breaking circuit boards as claimed by the present invention. As previously argued, the nature, scale, physics and methodologies utilized by these references do not contain all the limitations of the present invention and are not within its field of endeavor. The Applicant asserts that the references do not teach the limitations of the present invention, the references are non-analogous and therefore not prior art, and that improper motivation to combine has been established. Therefore, the Applicant respectfully requests reconsideration of these claims.

Claims 9,12,14,15, and 20 rejected under 35 USC 103(a)

Claims 9,12,14,15, and 20 were rejected over DeRoo in view of Duecker. The Applicant respectfully incorporates all the above arguments regarding DeRoo and Duecker. Rather than repeating identical arguments regarding these two references and the limitations of claims 9, 12, 14, and 15 which are contained and argued as above for claims 1-8, the Applicant would like to concentrate on limitations not present in the cited references that have thus far not been addressed.

The Applicant traverses these rejections. The Applicant notes that although claim 21 has not been specifically addressed in the office action, the rejection of claim 20 using these two references affords the opportunity to address the novel limitations of claims 20 and 21 simultaneously. The Applicant notes that neither reference teaches the claimed limitation of a shield element placed over the electronic components wherein the torque is safely applied through the shield elements. This is quite significant as it is notable that the cited references not only don't utilize or teach shield elements but do not need them as they are non-analogous art. As the cited references were never intended to deal with circuit boards loaded with electronic components, they do not teach such a limitation. The materials processed by the cited references are not as fragile nor similarly damaged as circuit boards. This further emphasizes not only these references failure to teach the cited limitations of the present claims but their non-analogous nature.

Claims 10 and 11 are rejected under 35 USC 103(a)

Claims 10 and 11 are rejected under 35 USC 103(a) as being unpatentable over DeRoo in view of Duecker in further view of Deshet. The Applicant traverses this rejection and again reasserts the objections to DeRoo, Duecker, and Deshet. The Applicant asserts as above that the cited references fail to teach the limitations of the present invention. The Applicant further asserts that there is improper motivation to combine a flat die-cutting material device, a cardboard ripping device, and a sheet metal stamping device to arrive at the claimed apparatus for snapping apart individual circuit boards from a multiboard array. The Applicant further notes that the assertion that Deshet teaches a stabilizing device as opposed to a clamping device is incorrect. The present invention claims a stabilizing device to reduce board flex. This is not taught by the cited references. It is noted, however, that the underlying claim limitations (as

previously argued) are not contained within DeRoo or Duecker and therefore the rejection is improper even without regard to Deshet or the lack of motivation to combine.

Claim 13 was rejected under 35 USC 103(a)

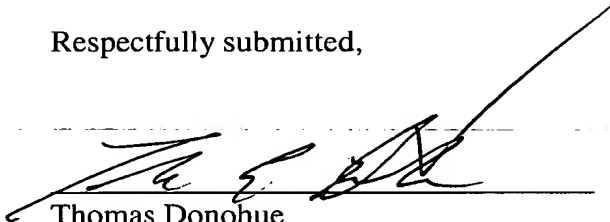
Claim 13 was rejected under 35 USC 103(a) as being unpatentable over DeRoo in view of Duecker in further view of Fetouh. The Applicant traverse and reincorporates all the previous arguments regarding the failure of DeRoo and Duecker to teach the underlying limitations of the claimed invention. The Applicant, therefore requests reconsideration.

CONCLUSION

The Applicant would like to thank the Examiner for his assistance. In light of the above amendments and remarks, Applicant submits that all objections and rejections are now overcome. Applicant has added no new material to the application. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited.

Should the Examiner have any questions or comments that would place the application in better condition for allowance, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,



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